CONTENTS

SECTION A—VOL. LXVII

No. 1—January 1968

PAGE

On Some Applications of Dynamic Programming to Information Theory . . . . . J. N. Kapur 1

Microwave Spectrum of Pentafluorobenzonitrile . . . . . S. D. Sharma and S. Doraiswamy 12

Spins of the First Two Excited States in ^{27}Mg by an Angular Correlation Technique in the Reaction ^{26}Mg $(d, p\gamma)$ ^{27}Mg . . . . . M. A. Eswaran and N. L. Ragoowansi 19

Search for Physiologically Active Compounds. Part XII. Synthesis and Fungistatic Activity of 5: 6- and 5: 8-Quinoline Quinones . . . . . B. Harinath Babu and N. V. Subba Rao 31

Mechanism of Oxidation of Secondary Alcohols by Bromine—Oxidation of Bicyclic Secondary Alcohols . . . . . V. Thiagarajan and N. Venkatasubramanian 37

Search for Physiologically Active Compounds. Part XIII. Synthesis of Some 3-Amino-4-Hydroxy Coumarins and Coumarino (3 : 4) Oxazoles as Analogues of Novobiocin . . . . . K. S. R. Krishna Mohan Rao and N. V. Subba Rao 42

Rotational Analysis of the 0–0 Band of the A $^3\Pi_{1u}$ X $^3\Sigma^-$ System of ND . . . . . G. Krishnamurty and N. A. Narasimham 50

No. 2—February 1968

γ-Rays from Discrete Radio Sources . . . . . T. N. Rengarajan 61

Mean Amplitudes of Vibration and Coriolis Coupling Constants of Some XY_3Z Type Silicon Compounds . . . . . K. Venkateswarlu and V. Malathy Devi 71

Oxidation Studies. IV. Kinetics of Oxidation of HCHO and Some Alcohols by Ceric Salts in HNO_3 Medium . . M. Santappa and B. Sethuram 78

PAGE

No. 2—February 1968—*Contd.*

Chalcones as Inorganic Analytical Reagents. Part III. Spectrophotometric Study of the Germanium Complex with 2', 3', 4'-Trihydroxy Chalcone . . . . . K. Syamasundar 90

Vibrational Spectra, Force Constants and Mean Amplitudes of Vibrations of Urea and Deuterated Urea . . . . . P. G. Puranik and Lalitha Sirdeshumkh 99

Trapped Point Defects in Crystals: Simultaneous Occurrence of Two Vacancies . . . . . P. V. Pantulu and S. Radhakrishna 109

On the Determination of $E_{\frac{1}{2}}^{\circ}$ from Polarographic Data . . . . . C. S. Venkatachalam and S. R. Rajagopalan 115

No. 3—March 1968

The Atmosphere of the Earth . . . . . Sir C. V. Raman 123

Electron Paramagnetic Resonance of Mn^{2+} in $(NH_4)_2SO_4$ Single Crystal . . . . . B. V. R. Chowdari and Putcha Venkateswarlu 130

Rigidity Spectrum of Cosmic Ray Helium Nuclei . . . . . K. C. Anand, R. R. Daniel, S. A. Stephens, B. Bhowmik, C. S. Krishna, P. K. Aditya and R. K. Puri 138

Studies on the Sol-Gel Transformation of Silicic Acid Sol in Presence of Dyes . . . . . Wahid U. Malik and Iqbal A. Khan 155

X-ray Spectroscopic Study of Chemical Bonding in $MnSe_2$ and $CoSe_2$ . . . . . Chintamani Mande and A. S. Nigavekar 166

No. 4—April 1968

Vinyl Polymerization. VI. Dilute Solution Properties of 1:1 Poly (Styrene-Co-Ethylmethacrylate) . . . . K. Karunakaran and M. Santappa 175

Vibrational Spectra and Normal Vibrations of Acetanilide and N-Deuterated Acetanilide . . V. Venkata Chalapathi and K. Venkata Ramiah 184

Unsteady Couette Flow of a Conducting Fluid Between Two Parallel Plates Under a Transverse Magnetic Field—I . . . . V. Vidyanidhi 199

PAGE

No. 4—April 1968—*Contd.*

Spectrophotometric Studies of Copper (II)—*Bis*-2-Pyridyl Glycol Complex . . . . . A. N. Bhat, R. D. Gupta and B. D. Jain 208

Green's Theorem in Paracompact Manifolds Modelled on Hilbert Space . . . . . Nirmala Prakash 215

An Isomorphism Theorem . . . . . Stanley P. Franklin 219

Physico-Chemical Studies on the Formation of Some Tungsto-Tartrates and Molybdo-Tartrates . . . . . K. S. R. Krishnaiah 222

No. 5—May 1968

The Diamond: Its Structure and Properties . . . . Sir C. V. Raman 231

Some Identities Involving Kampe de Feriet's Double Hypergeometric Functions—I . . . . . S. K. Rangarajan 247

Possible Anisotropy of Solar Modulation and the Low Energy Cosmic-Ray Spectra . . . . . M. V. K. Apparao 262

Electrons Magnetic Fields and Background Radio Emission in the Galaxy . . . . . K. C. Anand, R. R. Daniel and S. A. Stephens 267

The Fundamental Theorem on the Relation Between Spin and Statistics . . . . . E. C. G. Sudarshan 284

No. 6—June 1968

Diffraction of Light by Supersonic Waves: The Solution of the Raman-Nath Equations—I . . . . . Frederik Kuliasko, Robert Mertens and Oswald Leroy 295

Diffraction of Light by Supersonic Waves: The Solution of the Raman-Nath Equations. II. The Exact Solution . . . . . Robert Mertens and Frederik Kuliasko 303

Some Integrals Involving Products of Mieger's G-Function and H-Function . . . . . P. Anandani 312

NMR and IR Studies of the Interactions of Compounds Containing OH Group with Some Ethylenes . . . . . C. L. Khetrapal, M. M. Dhingra, K. Venkata Ramiah and P. Usha Bai 322

PAGE

No. 6—June 1968—*Contd.*

Differential Forms and Nuclear Structure . . . . . R. Ramanna 328

Isotope Shifts in the Second Negative Bands of O_2^+ . . . . . G. L. Bhale and P. Ramakoteswara Rao 350